



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/559,883	04/26/2000	Michael Freed	99,918	1786

20306 7590 05/03/2005

MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE
32ND FLOOR
CHICAGO, IL 60606

EXAMINER

JACOBS, LASHONDA T

ART UNIT PAPER NUMBER

2157

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/559,883

Applicant(s)

FREED ET AL.

Examiner

LaShonda T. Jacobs

Art Unit

2157

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

This is a Final Office Action in response to Applicant's amendment filed on February 7, 2005.

Claims 1-8 and 10-29 are presented for further examination.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims **22-29** are rejected under 35 U.S.C. 102(e) as being anticipated by Mulligan.

As per claim **22**, Mulligan discloses a method of reducing message fragmentation between the data source and the data receiver connected by a network comprising the steps of:

- intercepting a first announcement of a first connection between said data source and said data receiver (col. 5, lines 27-34 and col. 7, lines 55-67); and
- predicting predicted maximum segment size of said first connection, wherein said predicted maximum segment size is placed in a signal (col. 8, lines 46-52 and col. 9, lines 7-21);
- sending said signal with a no-fragment option set to said data source and said data receiver (col. 5, lines 27-34 and col. 7, lines 55-67);

Art Unit: 2157

- storing a determined maximum segment size, whereupon said determined maximum segment size results from a signal response having a maximum transmission unit that is no larger than a maximum transmission unit of said network (col. 8, lines 46-52 and col. 9, lines 7-21); and
- inserting said determined maximum segment into subsequent announcements of connections between said data source and said data receiver.

As per claim **23**, Mulligan discloses:

- wherein said determined maximum segment size is iteratively predicted until a message maximum transmission unit is no larger than a maximum transmission unit of said network (col. 8, lines 46-52 and col. 9, lines 7-21).

As per claim **24**, Mulligan discloses:

- wherein said no-fragment option is set in an IP header within said signal (col. 5, lines 27-34 and col. 7, lines 55-67).

As per claim **25**, Mulligan discloses an apparatus for reducing message fragmentation between a data source and a data receiver connected by a network comprising:

- a network device connected to the network, wherein said communications denote a maximum segment size for the network, wherein said network device changes the maximum segment size to a determined maximum segment size that is to be used in data transmission between said data source and said data receiver (col. 5, lines 27-34, col. 7, lines 55-67 and col. 9, lines 38-48); and
- a storage device connected to said network device for storing said determined maximum segment size for data transmitted between said data source and said data receiver;

Art Unit: 2157

wherein said network device stores said determined maximum segment sizes in accordance to data communication between said data source and data receiver (col. 6, lines 18-29, col. 8, lines 46-52 and col. 9, lines 7-21).

As per claim 26, Mulligan discloses:

- wherein said announcement comprises a first message (col. 5, lines 27-34 and col. 7, lines 55-67); and
- wherein said first message comprises a set SYN bit (col. 5, lines 27-34 and col. 7, lines 55-67).

As per claim 27, Mulligan discloses:

- wherein the network device iteratively predicts said determined maximum segment size (col. 8, lines 46-52 and col. 9, lines 7-21).

As per claim 28, Mulligan discloses:

- wherein said storage device comprises a database (col. 8, lines 46-52 and col. 9, lines 7-21).

As per claim 29, Mulligan discloses:

- wherein said network device comprises a gateway (router) device (col. 5, lines 27-34 and col. 7, lines 55-67).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

Art Unit: 2157

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8 and 10-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulligan in view of Matsuzono.

As per claim 1, Mulligan discloses a method for changing a maximum segment size for a connection between a data source and a data receiver on a network comprising the steps of:

- receiving an announcement of a first connection between said source and said data receiver, wherein said announcement denotes a maximum segment size (col. 5, lines 27-34 and col. 7, lines 55-67); and
- changing said maximum segment size in said announcement of said first connection to a determined maximum segment size (col. 5, lines 27-34, col. 7, lines 55-67 and col. 9, lines 38-48).

However, Mulligan does not explicitly disclose:

- wherein the determined maximum segment size reduces message fragmentation.

Matsuzono discloses a data communication mechanism capable of producing data packet having an optimal segment size in communication system comprising:

- wherein the determined maximum segment size reduces message fragmentation (abstract, col. 2, lines 45-67, col. 3, lines 1-5 and lines 34-48).

Given the teaching of Matsuzono, it would have been obvious to one of ordinary skill in the art to modify Mulligan by including an optimal segment size determinator to determine the maximum segment size for the data transmission in order to reduce message fragmentation.

As per claim 2, Mulligan further discloses:

- recalculating a checksum of said announcement (col. 9, lines 7-16).

As per claim 3, Mulligan discloses:

- wherein said announcement comprises a first message of a data stream in said connection (col. 5, lines 27-34 and col. 7, lines 55-67).

As per claim 6, Mulligan discloses:

- wherein changing said maximum segment size comprises changing said maximum segment size in a TCP header in said announcement (col. 5, lines 27-34, col. 7, lines 34-41, lines 55-67 and col. 9, lines 38-48).

As per claim 7, Mulligan discloses:

- wherein said determined maximum segment size is preprogrammed into a database (col. 8, lines 46-52 and col. 9, lines 7-21).

As per claim 10, Mulligan discloses:

- wherein said determined maximum segment size avoid re-assembly of fragments (col. 5, lines 27-34, col. 7, lines 55-67 and col. 9, lines 38-48).

As per claim 11, Mulligan discloses a method of reducing message fragmentation for a connection between a data source and a data receiver on a network comprising the steps of:

- resetting said first connection, wherein resetting said first connection initiates a second connection (col. 5, lines 27-34, col. 7, lines 55-67 and col. 9, lines 38-48); and
- placing said maximum segment size into an announcement of said second connection (col. 6, lines 18-29, col. 8, lines 46-52 and col. 9, lines 7-21).

However, Mulligan does not explicitly disclose:

Art Unit: 2157

- receiving a first message fragment of a first connection between said data source and said data receiver; and
- storing a maximum segment size of said first message fragment of said first connection, wherein said maximum segment size exists in accordance with said first message fragment.

Matsuzono discloses:

- receiving a first message fragment of a first connection between said data source and said data receiver (abstract, col. 2, lines 45-67, col. 3, lines 1-5, lines 34-67 and col. 4, lines 1-7); and
- storing a maximum segment size of said first message fragment of said first connection, wherein said maximum segment size exists in accordance with said first message fragment (abstract, col. 1, lines 51-57, col. 2, lines 45-67, col. 3, lines 1-5, lines 34-48 and col. 5, lines 15-32).

Given the teaching of Matsuzono, it would have been obvious to one of ordinary skill in the art to modify Mulligan by including an optimal segment size determinator to determine and store the maximum segment size for a data packet in order to transmit messages across a network to perform a data communication among the computers.

As per claim **12**, Mulligan further discloses:

- recalculating a checksum of said announcement of said second connection (col. 9, lines 7-16).

As per claim **13**, Mulligan discloses:

Art Unit: 2157

- wherein said first message fragment comprises a first message of a data stream in said connection (col. 5, lines 27-34 and col. 7, lines 55-67).

As per claims 4 and 14, Mulligan discloses:

- wherein said announcement comprises a set SYN bit (col. 5, lines 27-34 and col. 7, lines 55-67).

As per claims 5 and 15, Mulligan discloses:

- wherein said first connection is one of any virtual connections utilizing TCP/IP between said data source and said data receiver (col. 5, lines 27-34, col. 7, lines 34-41, lines 55-67 and col. 9, lines 38-48).

As per claims 8 and 21, Mulligan discloses:

- wherein said data source comprises customer premise equipment, and wherein data receiver comprises customer premise equipment (col. 5, lines 64-67 and col. 6, lines 1-17).

As per claim 16, Mulligan discloses:

- wherein said second connection is a connection following said first connection (col. 5, lines 27-34 and col. 7, lines 55-67).

As per claim 17, Mulligan discloses:

- wherein storing said maximum segment size comprises storing said maximum segment size in a database (col. 8, lines 46-52 and col. 9, lines 7-21).

As per claim 18, Mulligan discloses:

- wherein resetting said first connection comprises closing said first connection by setting a RST bit (col. 5, lines 27-34, col. 7, lines 55-67 and col. 9, lines 38-48).

As per claim 19, Mulligan discloses:

- wherein resetting said first connection initiates said second connection (col. 5, lines 27-34, col. 7, lines 55-67 and col. 9, lines 38-48).

As per claim 20, Mulligan discloses:

- wherein placing said maximum segment message size into said announcement of said second connection comprises placing said maximum segment message into a TCP header within said announcement of said second connection (col. 6, lines 18-29, col. 8, lines 46-52 and col. 9, lines 7-21).

Response to Arguments

5. Applicant's arguments filed February 7, 2005 have been fully considered but they are not persuasive.

- a. Mulligan does not teach a method of reducing message fragmentation between a data source and a data receiver connected by a network.
- b. Mulligan does not teach the method of independent claims 22 and 25.
- c. Mulligan does not teach a method where connection announcements are modified by changing the maximum segment size denoted in the announcement.
- d. Matsuzono does not teach changing the MSS in the announcement message to determined MSS.
- e. Mulligan does not teach a method of involving the step of resetting a connection between the data source and the data receiver.
- f. Mulligan does not teach the step of placing a MSS size into an announcement of a connection.

In response to:

(a)-(c) and (f). Mulligan teaches a method for determining the maximum transmission unit capable of being transmitted over the network. Mulligan also teaches a method of reducing fragmentation by selecting the proper datagram size for evenly distributing the datagrams over the network (col. 8, lines 1-23). Therefore, Mulligan does teach reducing message fragmentation between a data source and a data receiver connected by a network.

(d) Matsuzono teaches a method determining a maximum segment size to send the appropriate amount of data to the destination. Matsuzono also compare the maximum segment size with the optimal segment size determinator in order to derive the maximum connection size for the receiver (col. 3, lines 34-47). Therefore, Matsuzono teaches changing the MSS in the announcement message to determined MSS.

(e) Mulligan also teaches a method of reducing fragmentation by selecting the proper datagram size for evenly distributing the datagrams over the network (col. 8, lines 1-23). Each time that the maximum segment size have to determine the connection between the source and the receiver has to be reset since the receiver maximum segment size changes for each connection.

Therefore, Mulligan does teach resetting a connection between the data source and the data receiver.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaShonda T. Jacobs whose telephone number is 571-272-4004. The examiner can normally be reached on 8:30 A.M.-5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LaShonda T Jacobs
Examiner
Art Unit 2157

Application/Control Number: 09/559,883

Page 12

Art Unit: 2157

ltj

April 29, 2005


ARJO ETIENNE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100